

Appl. No. 10/717,881
Amdt. dated March 10, 2006
Reply to Office Action of December 12, 2005

PATENT

Amendments to the Drawings:

The attached sheets of drawings includes changes to FIGS. 1A, 1B, and 1C. These sheets, which include FIGS. 1A, 1B, and 1C, replace the original sheets including FIGS. 1A, 1B, and 1C.

Attachment: Replacement Sheets
Annotated Sheets Showing Changes

REMARKS/ARGUMENTS

Claims 1 and 5-12 are pending. Claims 1, 5-8, and 10 have been amended.

Claims 2-4 have been canceled. Support for the amended claims is found in the specification.

No new matter has been added.

Claim 10 is rejected under 35 U.S.C. § 112, second paragraph, as being indefinite.

Claims 1-3, 9 and 11 are rejected under 35 U.S.C. § 102(b) as being anticipated by Williams (5,614,026).

Claims 1-3 and 12 are rejected under 35 U.S.C. § 102(b) as being anticipated by Adomaitis et al. (WO 02/08487).

Claims 4-8 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Williams.

Claims 4-8 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Adomaitis et al.

Formal Matters

The undersigned wishes to thank the Examiner for the helpful telephone interview conducted on March 2, 2006.

Drawings

FIGS. 1A, 1B, and 1C have been designated as prior art as requested by the Examiner.

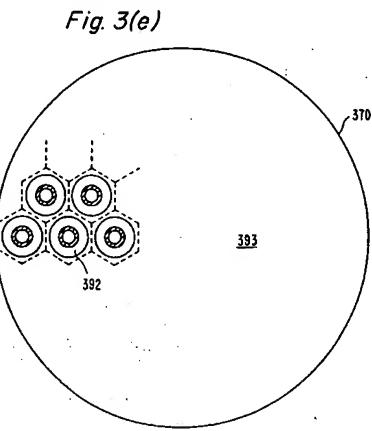
Claim Rejection - 35 U.S.C. § 112

Claim 10 has been amended to recite "wherein the first exhaust conduit is in fluid communication with the common foreline through a first valve and the second exhaust conduit is in fluid communication with the common foreline through a second valve." The reference to "the plurality of second channels are []," which lacked antecedent basis, has been amended to recite "the first exhaust conduit is []." The undersigned thanks the Examiner for bringing this antecedent basis problem to the attention of the Applicants. The Applicants respectfully submit that the amended claim overcomes the indefiniteness rejection of the present Office action. Thus, the Applicants request the Examiner withdraw the pending §112, second paragraph rejection of claim 10.

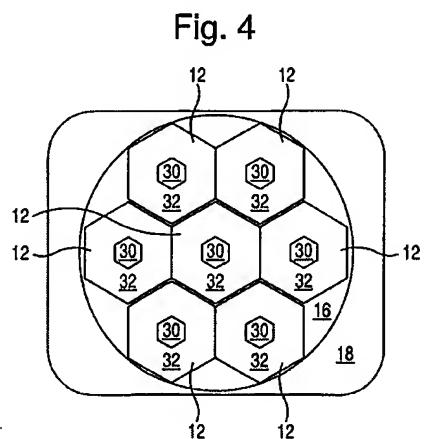
Claim Rejections - 35 U.S.C. § 102(b)

Claim 1 recites "the gas distribution showerhead comprising: a first channel in fluid communication with the processing gas source and with apertures distributed over a lower surface of the showerhead, wherein the apertures define a first area; and a second channel separate from the first channel and in fluid communication with a second exhaust conduit and with exhaust apertures distributed over the lower surface of the showerhead, wherein the exhaust apertures define a second area and a ratio of the first area to the second area varies as a function of radial distance from the center of the gas distribution showerhead." The Applicants respectfully submit that the cited references, either taken alone or in combination, do not teach or suggest at least these claim elements.

The cited references do not teach or suggest gas distribution showerheads in which the ratio of the area of the gas distribution apertures to the area of the exhaust apertures varies as a function of radial distance. In fact, as shown below in FIG. 3(e) of Williams and FIG. 4 of Adomaitis, both cited references utilize honeycomb faceplate designs including hexagonal inlet/exhaust pairs with uniform inlet and exhaust areas. Utilizing control and distribution network 13 as shown in FIG. 5, Adomaitis discusses a system in which gas types and volumes "can be supplied equally to each segment or in any disparate ratio desired." (Adomaitis at page 17, lines 4-13 and FIG. 5). However, in contrast with embodiments of the present invention, the control in Adomaitis is based on control of gas flow rates, not through varying the ratio of the distribution aperture area to the exhaust aperture area as a function of radial distance. Thus, neither cited reference teaches or suggests varying the ratio of the distribution aperture area to the exhaust aperture area as a function of radial distance as recited by claim 1. For at least these reasons, claim 1 is allowable over the cited references.



Williams: FIG. 3(e)



Adomaitis: FIG. 4

Claims 9-12, which depend from claim 1, are in condition for allowance, for at least the reasons discussed in relation to claim 1, as well as for the additional elements they recite.

Claim Rejections - 35 U.S.C. § 103(a)

Claims 5-8 now depend from claim 1 and are in condition for allowance, for at least the reasons discussed in relation to claim 1, as well as for the additional elements they recite.

CONCLUSION

In view of the foregoing, the Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 650-326-2400.

Respectfully submitted,


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Attachments

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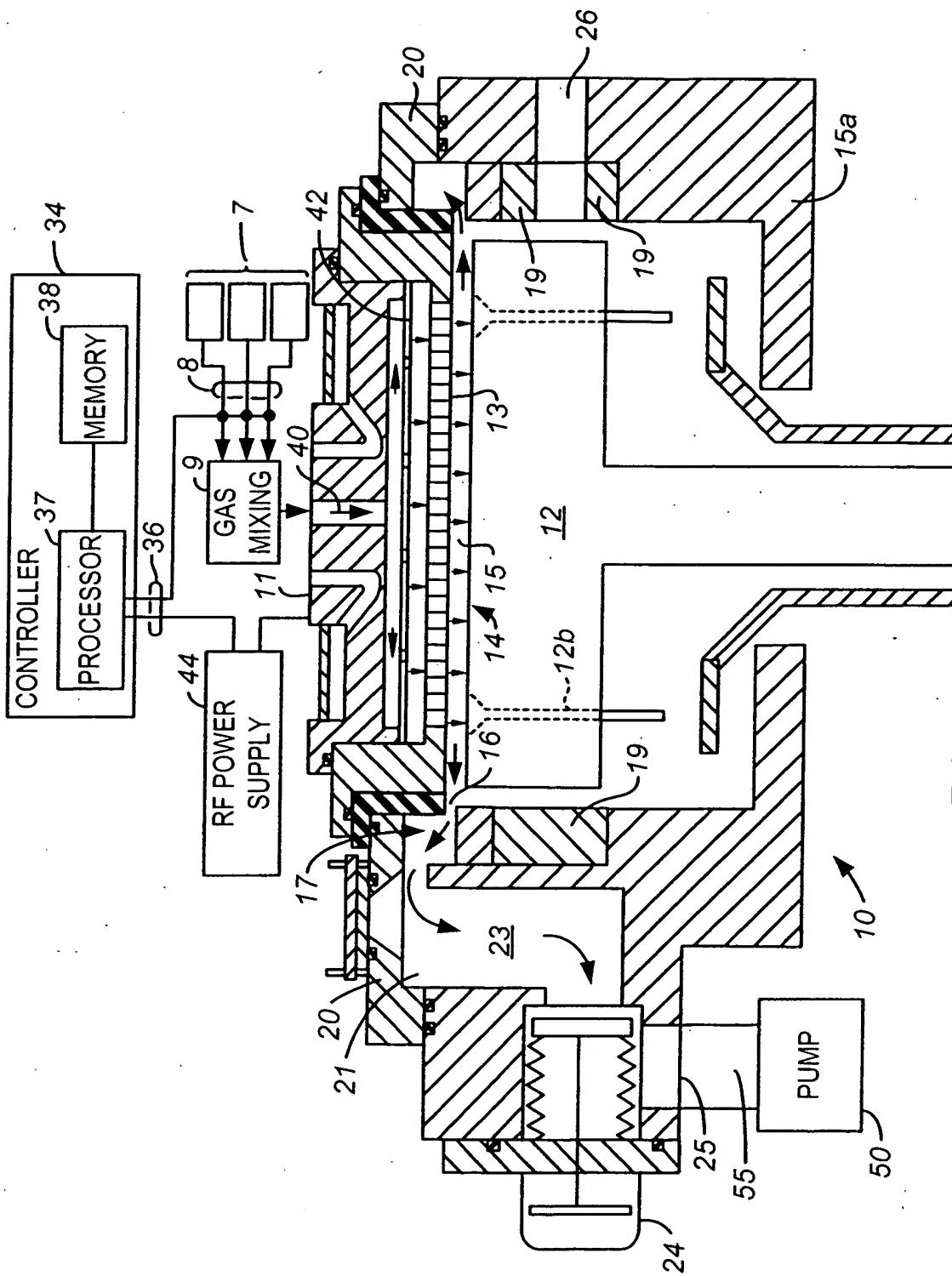
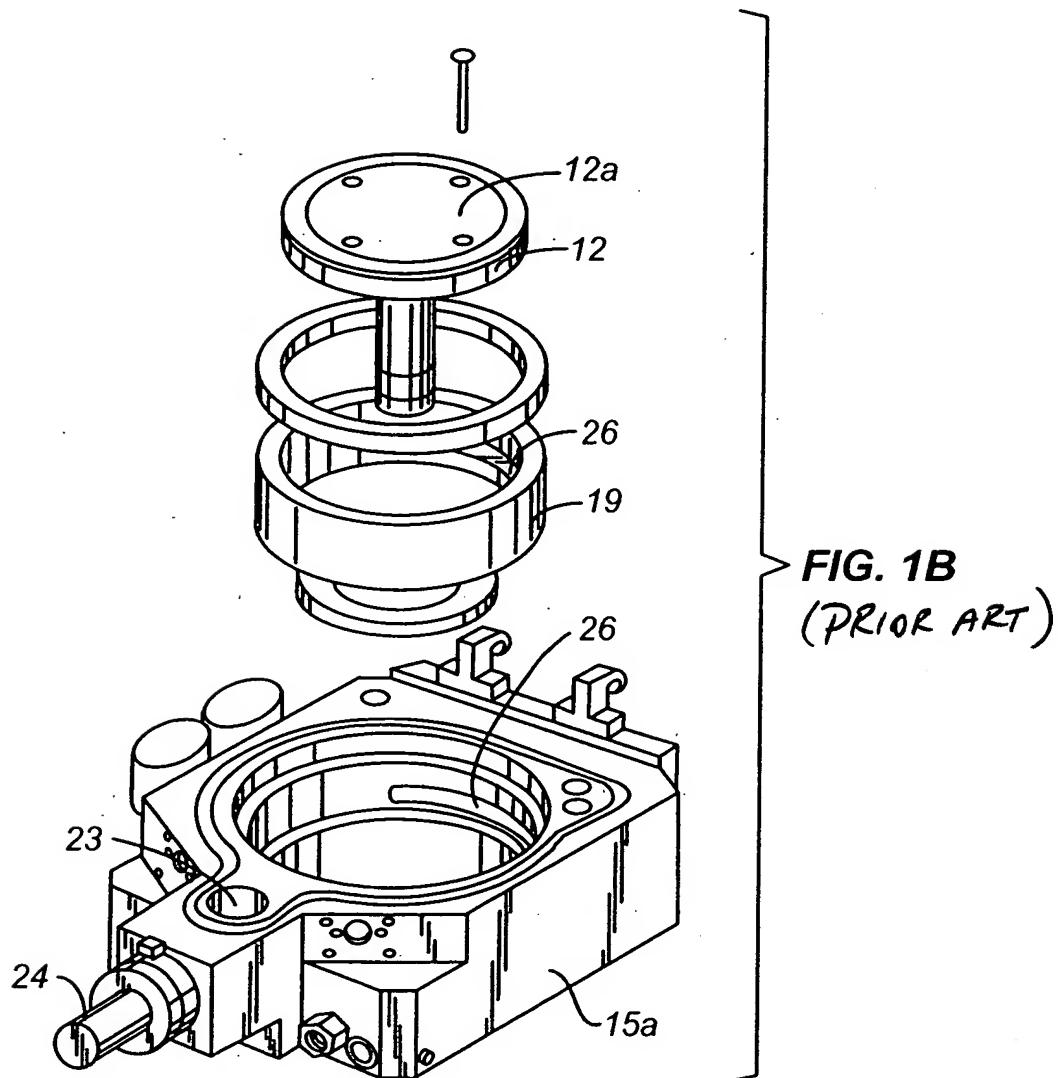


FIG. 1A
(PRIOR ART)

2/10



3/17

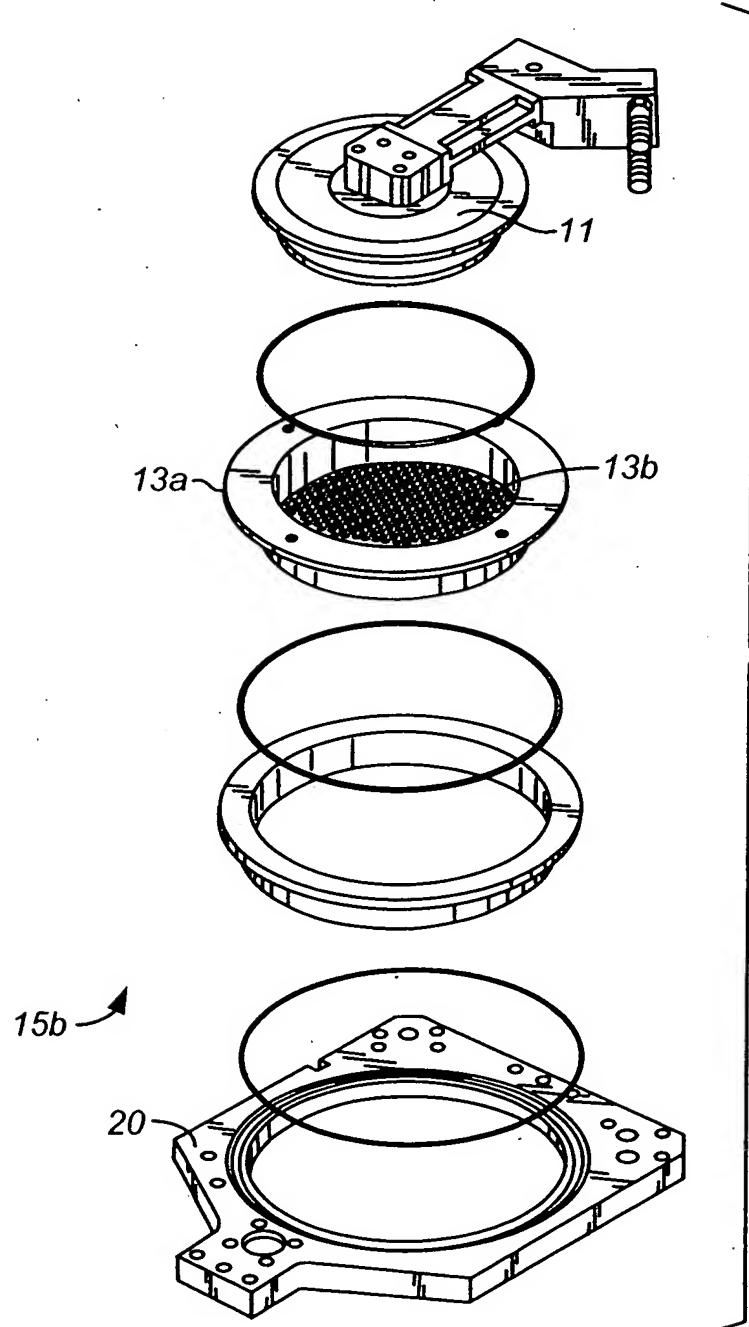


FIG. 1C
(PRIOR ART)